

**SEMU #161**  
**PROPOSED CASING & CEMENT PLAN**

|                                                |                       |                                                                        |             |
|------------------------------------------------|-----------------------|------------------------------------------------------------------------|-------------|
| Surface casing size:                           | 8-5/8", 24# J-55 ST&C | Casing OD:                                                             | 8.625 in    |
| Surface casing depth:                          | 1,300 ft              | Casing ID:                                                             | 7.007 in    |
| Hole size:                                     | 12.25 in              | Shoe jt length:                                                        | 40 ft       |
| Static temperature:                            | 89 deg F              | Lead Excess:                                                           | 101 %       |
| Circulating temperature:                       | 85 deg F              | Tail Excess:                                                           | 106 %       |
| Lead:                                          | 465 sx                | Cl C + 0.25 pps Cello Flake + 0.005 gps FP-6L + 2% Sodium Metasilicate |             |
| Tail:                                          | 200 sx                | Cl C + 2% CaCl + 0.005 gps FP-6L                                       |             |
| <b>Properties</b>                              |                       | <b>Lead</b>                                                            | <b>Tail</b> |
| Slurry Weight (ppg)                            |                       | 12.4                                                                   | 14.8        |
| Slurry Yield (cfps)                            |                       | 2.15                                                                   | 1.34        |
| Mix Water (gps)                                |                       | 12.33                                                                  | 6.35        |
| Pump time - 70 BC (HH:MM)                      |                       | 6:25                                                                   | 2:20        |
| Free Water (mls) @ 80 deg F @ 90 deg angle     |                       | 0                                                                      | 0           |
| Fluid Loss (cc/30 min) @ 1000 psi and 80 deg F |                       | 854                                                                    | 900         |
| Compressive Strength (psi)                     |                       |                                                                        |             |
| 12 hrs @                                       | 89 deg F              | 124                                                                    | 1200        |
| 24 hrs @                                       | 88 deg F              | 250                                                                    | 2500        |

|                                                |                      |                                                                                        |             |
|------------------------------------------------|----------------------|----------------------------------------------------------------------------------------|-------------|
| Production casing size:                        | 5-1/2" 17# L-80 LT&C | Casing OD:                                                                             | 5.500 in    |
| Production casing depth:                       | 9,100 ft             | Casing ID:                                                                             | 4.892 in    |
| Hole size:                                     | 7.875 in             | Shoe jt length:                                                                        | 80 ft       |
| Static temperature:                            | 129 deg F            | Lead Excess:                                                                           | 51 %        |
| Circulating temperature:                       | 122 deg F            | Tail Excess:                                                                           | 51 %        |
| Lead:                                          | 555 sx               | 50:50 Poz:Cl C + 5% bwow NaCl + 0.25 pps Cello Flake + 0.005 gps FP-6L + 10% Bentonite |             |
| Tail:                                          | 460 sx               | 15:61:11 Poz:Cl C:CSE + 5% bwow NaCl + 1% FL-62 + 0.005 gps FP-6L                      |             |
| <b>Properties</b>                              |                      | <b>Lead</b>                                                                            | <b>Tail</b> |
| Slurry Weight (ppg)                            |                      | 11.85                                                                                  | 13.60       |
| Slurry Yield (cfps)                            |                      | 2.41                                                                                   | 1.49        |
| Mix Water (gps)                                |                      | 13.79                                                                                  | 7.31        |
| Pump time - 70 BC (HH:MM)                      |                      | 2:58                                                                                   | 2:31        |
| Free Water (mls) @ 80 deg F @ 90 deg angle     |                      | 1                                                                                      | 0           |
| Fluid Loss (cc/30 min) @ 1000 psi and 80 deg F |                      | 792                                                                                    | 62          |
| Compressive Strength (psi)                     |                      |                                                                                        |             |
| 12 hrs @                                       | 124 deg F            | 50                                                                                     | 1013        |
| 24 hrs @                                       | 124 deg F            | 175                                                                                    | 1875        |